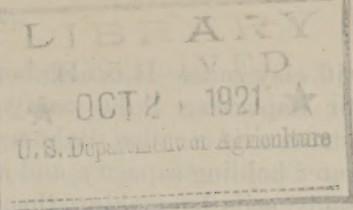


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United States Department of Agriculture, BUREAU OF PLANT INDUSTRY,

Office of Seed Distribution.

WASHINGTON, D. C.

THE LAWN.

The development of a satisfactory lawn depends to a large degree on the foundation upon which it has been started. A really good lawn rarely results from a poor beginning, and no reasonable amount of effort and expense will overcome mistakes in preliminary preparation.

SOIL AND SOIL PREPARATION.

A suitable soil is the first consideration in lawn making. Especially is this true where the climate is unfavorable to the best growth of the turf-forming grasses. There are few soils that can not be improved by treatment, and in the case of most soils much treatment is necessary. Good drainage, good texture, and good preparation are essential considerations. Good drainage should be secured before further preparation is made. In few cases is tiling necessary for the ordinary lawn, but for extensive low-lying areas where thorough surface and underdrainage are poor, tile properly laid will result in much improvement.

A deep loamy soil is easily made suitable for lawn purposes, since it already possesses a good texture. If necessary, it can be enriched by the addition of barnyard manure or, if this is not available, an application of 20 pounds of bone meal for an area of a thousand square feet may be substituted. In either case the material should be well incorporated with the soil. Stiff clay soils require both sand and vegetable matter before they are really suitable for the production of a good turf. There is little danger of using too much of either of these materials. A quantity of sand equivalent to a surface layer of 1 inch in depth, if worked into the clay, produces a permanent improvement in its texture. Even a smaller quantity is helpful, while much more can be used advantageously. On the average-sized lawn it is entirely feasible to use sand for the purpose of improving

stiff clay soils. It is also both practicable and desirable to use clay for improving light sandy soils. Decayed vegetable matter, or humus as it is called, lightens the texture of clay soils, increases their water-holding capacity, and improves their drainage; it also improves sandy soils by making them more cohesive and more retentive of moisture. Thoroughly rotted and comminuted barnyard manure, good compost, or mushroom soil are all suitable forms of humus for the lawn. One-half ton to a thousand square feet ordinarily is sufficient. This should be thoroughly mixed with the soil. Organic matter can be supplied to the soil intended for a lawn much more successfully and usually more cheaply in the form of manure or compost than by means of green crops turned under.

Where the growth of Kentucky bluegrass and white clover is unsatisfactory it is quite probable that it can be improved by the use of lime. For the best results lime should be incorporated with the soil before the seed is sown. One hundred pounds of air-slaked lime for each 1,000 square feet is a satisfactory application. Lime as a top-dressing for turf is not recommended; neither is its use advised where the turf is composed of the bent grasses or the fescues unless the soil is highly acid or contains a large proportion of slowly decaying organic matter.

Preliminary preparation, by which is meant the thorough stirring of the surface foot of soil, should begin several weeks prior to seeding to allow sufficient time for the ground to become thoroughly settled and for the weed seeds to germinate.

SEED AND SEEDING.

There are several species of turf-forming grasses that can be used for lawn making in this country, but for the northern part of the United States Kentucky bluegrass is, generally speaking, the most desirable. For the best results it is commonly used in mixtures with other grasses. The mixture contained in the accompanying package has been thoroughly tested and is thought to be quite as satisfactory for general lawn making as any mixture that can be used. It is composed by weight approximately as follows:

- 17 parts of Kentucky bluegrass.
- 4 parts of recleaned redtop.
- 3 parts of perennial rye-grass.
- 1 part of white clover.

A slight modification of these proportions makes no material difference in the appearance or success of the lawn. A mistake which is commonly made in starting a lawn is that of using too little seed. A thick stand of grass is essential at the beginning, and in order to be certain of securing it seed of the above mixture should be sown at the rate of not less than 2 pounds to a thousand square feet.

The advantage of a mixture of Kentucky bluegrass, redtop, and perennial rye-grass lies in the fact that the seed of redtop and rye-grass germinates quickly and produces a good turf in a short time from seeding. Kentucky bluegrass seed, on the other hand, germinates very slowly, and the grass does not cover the ground as a rule until the following season. Close mowing soon causes the redtop to disappear and after the first year the turf is made up almost entirely of bluegrass. White clover in the opinion of many adds to the appearance of the turf and mixes well with Kentucky bluegrass.

Except perhaps in the northern tier of States and in New England, early autumn seeding is much more satisfactory than spring seeding. South of New York and the New England States spring seeding should rarely, if ever, be practiced. Young grass does not stool well in the spring and summer and is not sufficiently aggressive to combat crab-grass and other summer annual weeds. In most of the area south of the New England States and north of the Potomac and Ohio Rivers the best time for seeding lawns is during the first weeks of September.

After the preliminary preparation, which involves the thorough working of the soil by some means, the surface of the area to be seeded should be thoroughly fined with a rake or similar implement, and bone meal applied at the rate of about 20 pounds to a thousand square feet. Bone meal is of much benefit to the young grass, since it assists it in making sufficient growth to pass the first winter in good condition. The main point to be observed in seeding is to sow the seed evenly and to cover uniformly but lightly. The covering can be done on a small area with an ordinary garden rake or on a large area with a weeder. Light rolling after covering is frequently beneficial.

REPAIR AND MANAGEMENT.

It frequently is more difficult to improve an old lawn than to make a new one. Where the turf is very poor the remaking of the lawn is advised. It is commonly supposed that turf may be improved by reseeding, and while there is considerable doubt with regard to the value of this practice, nevertheless it is recommended, since it involves relatively little expense, and even if the turf is improved for a short time only it is well worth while. The reseeding of an old lawn should be done at the same time of the year as new seeding. South of New York it should be done in the early fall. If the lawn is patchy the areas to be improved should be scratched with a steel rake or similar implement and dressed with a mixture of good loam or compost with which the seed is mixed. The loam or compost forms a suitable medium for the germination of the seeds and the development of the young grass plants. In reseeding even or uniformly thin turf this mixture is advised. After it is applied it should be watered

with a hose and later given a light rolling. Care should be taken when mowing or watering newly patched or seeded lawns to avoid disturbing the young grass.

GENERAL LAWN MANAGEMENT.

The care of a lawn after seeding has much to do with its success. In most parts of the country constant attention is necessary in order that even a fair lawn may be maintained.

FERTILIZING.

Most lawns need an occasional application of some good fertilizer, regardless of the kind of soil upon which they are established. Thoroughly rotted stable manure is an excellent fertilizer for grass, provided it is not coarse. Manure well composted with sod and leaf mold and sifted before using makes a very satisfactory dressing. So, also, does soil from mushroom cellars that has been well fined and sifted. Coarse manure or humus dressings should not be applied until after the end of the growing season when winter has begun, and they should be raked off before spring commences. Compost dressings should be applied in the autumn or winter and again in the spring. The best results are obtained when the material is in such condition that nothing will be left to rake off. Bone meal is one of the best commercial fertilizers for the lawn. It is safe to apply and gives fairly quick results. The best time to apply it is in the late winter and very early spring. From 10 to 15 pounds to 1,000 square feet is a sufficient quantity to use.

Nitrate of soda and sulphate of ammonia are the best quick-acting fertilizers for grass. They are very quickly soluble and readily available, but, unfortunately, unless they are applied carefully they scald the grass badly. Six pounds of either nitrate of soda or sulphate of ammonia for 1,000 square feet of surface is sufficient for one application. It is suggested that they be applied in a mixture with a good compost composed of 2 parts loam and 1 part finely divided manure or mushroom soil and spread evenly over the surface of the lawn. After the mixture is applied it should be well watered with a hose. If this practice is followed carefully little damage from scalding will result. If the compost is not available loam or sand may be used.

Applications of nitrate of soda or sulphate of ammonia in the way above suggested can be made advantageously in the spring, mid-summer, and early fall. A less pronounced effect is obtained from midsummer applications than from spring or fall applications.

SANDING.

Heavy clay soils are improved by applications of sand an eighth of an inch or more in depth. These may be made advantageously in

the fall, winter, or early spring. Sharp, clean sand free from silt is most suitable for this purpose. While the sand works into the surface of the soil very quickly and disappears from view, it nevertheless produces a lasting and decidedly beneficial effect.

Sand is beneficial also for eradicating the dark-green scum or slime, commonly called moss, that frequently occurs on shaded, poorly drained greens where the grass is thin. These patches are usually formed by lower plants belonging to the group known botanically as *algæ*. Covering them with sand will cause them to disappear and promote the growth of grass.

MOWING AND ROLLING.

Good turf requires frequent clippings. Lawns ordinarily should be clipped twice a week during the rapid growing season. Very close clipping may be detrimental, but it is seldom that a lawn is injured by this means. While it usually makes little difference whether the clippings are removed or allowed to remain on the lawn, it is considered the best practice to remove them. The roller should be used discreetly, especially on clay soils. Reasonably heavy rolling in the spring to firm the turf and smooth the surface of the lawn is quite helpful. Rolling during the summer on clay soil is neither necessary nor advisable.

WATERING.

During the dry periods of spring, summer, and fall lawns require watering. There is little definite information as to the best time of day to water them, but it is generally thought advisable to apply the water late in the afternoon. An occasional thorough soaking is much more beneficial than frequent light sprinklings. Any type of sprinkler that distributes the water evenly and freely is quite satisfactory. It is a good practice to begin sprinkling lightly, allowing the water to soak into the surface of the soil slowly before a full application is made. In this way the absorption is greatly increased and the quantity of water that can be applied without run-off is much larger than by the ordinary method.

ERADICATION OF WEEDS.

While weeds are troublesome in the lawn throughout the growing season, they are particularly so from the latter part of June until frost. During this period crab grass, which is by far the worst lawn weed south of New York, is especially aggressive. There is really no satisfactory method of checking the growth of crab grass except to cut or pull the plants while they are still small. This is a tedious and expensive practice, but where a good lawn is involved the results justify the expense. Much difficulty is usually experienced in cutting crab grass with an ordinary lawn mower on account of its

semiprostrate character. This difficulty can be overcome to a certain extent if the grass is raked prior to mowing. The rake raises the branches of the grass so that they can be clipped reasonably close with an ordinary lawn mower. It is impossible, however, to cut crab grass sufficiently close entirely to prevent the formation of seed.

There are many other weeds that are troublesome in the lawn, not only in the spring but in the summer and autumn. Among the most important are dandelion, plantain, chickweed, veronica, and oxeye daisy. Chemical sprays are somewhat more effective in eradicating these weeds than they are in eradicating crab-grass. However, the best method of eradicating them is by means of a spud or similar implement. In the main, the use of chemical sprays on lawn weeds has not given very satisfactory results. The weed problem can best be solved by making the conditions as favorable as possible for the turf grasses and maintaining a strict watch at all times to remove troublesome weeds as they appear. In constructing a lawn it is highly important that it be so protected that the overwash will not carry over it the seeds of noxious weeds. If this precaution is taken and no coarse manure top dressings are used, the weed problem is greatly lessened.

SHADY LAWNS.

To produce a good lawn in shade, especially in dense shade under trees and shrubs, is a very difficult matter. The grasses contained in the accompanying mixture are not particularly shade-loving grasses, but they can be made to thrive reasonably well in shade if given proper treatment.

By thorough watering and the liberal use of fertilizers and possibly lime in some cases the evil effect of shade can to some extent be overcome. Rough-stalk meadow grass (*Poa trivialis*) is the best shady lawn grass for the northeastern part of the United States, but, unfortunately, the seed is not commercially available. The next best shade grass is red fescue, and seed of this grass is on the market in considerable quantity. The variety of red fescue which is most abundant commercially is known as Chewings fescue. The seed comes from New Zealand. This grass requires the same care as the lawn grass mixture referred to in this circular, but lime should not be used in connection with it.

Approved:

Wm. A. TAYLOR,

Chief of Bureau.

SEPTEMBER 20, 1921.

